SECTION I - PRODUCT/COMPANY IDENTIFICATION
Product Name: REF 360084 E-Lieve™ Post-Bleaching Vitamin E Treatment, 120 x 0.3ml units
CENTRIX, INC., 770 RIVER ROAD, SHELTON, CT 06484
Emergency / Information Telephone Numbers: 203-929-5582        Toll-Free: 800-235-5862 (USA & Canada)

SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS
Characterization: Fat-soluble vitamin; additive for use in food, pharmaceuticals and cosmetics
Chemical Name: 3,4-Dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-1-benzopyran-6-ol acetate
Synonyms: 2,5,7,8-Tetramethyl-2-(4,8,12-trimethyltridecyl)-6-chromanol acetate, Vitamin E acetate
CAS Number: 7695-91-2
EINECS Number: 231 710 0
Ro Number: Ro 01-4213/000
Empirical Formula: C_{31}H_{52}O_{3}
Molecular Mass: 472.73 g/mol

SECTION III - HAZARDS IDENTIFICATION
Most important hazards - No particular hazards known.

SECTION IV - FIRST AID MEASURES
Eye Contact: Rinse with tap water for 10 minutes - open eyelids forcibly, Consult a physician if irritation persists
Skin Contact: Remove immediately contaminated clothes. Wash affected skin with water and soap. Do not use any solvents.
Consult a physician if skin irritation persists
Inhalation: Remove the casualty to fresh air and keep him/her calm in the event of symptoms get medical treatment
Note to Physician: Treat symptomatically

SECTION V - FIRE-FIGHTING MEASURES
Suitable Extinguishing Media: Foam, dry powder, carbon dioxide, water mist
Unsuitable Extinguishing media: Use water spray and water jet for cooling purposes only (fat explosion hazard)
Protection of Fire-Fighters: Precipitate gases/vapours/mists with water spray

SECTION VI - ACCIDENTAL RELEASE MEASURES
Environmental Protection: Do not allow to enter drains or waterways.
Nontoxic and biodegradable, but very slow biodegradation due to low water solubility
Methods for cleaning up: Collect spills with inert adsorbent and hand over to waste removal. Clean contaminated areas with little ethanol

SECTION VII - HANDLING AND STORAGE
Handling
Technical Measures: Processing in closed systems, if possible superposed by inert gas (e.g. nitrogen).
Take precautionary measures against electrostatic charging
Suitable Materials: Stainless steel, aluminium, enamel, glass, polyethylene - test plastics before use
Storage
Storage Conditions: Protected from light and humidity
Validity: 36 months, < 25 °C, in the unopened original container, see "best use before" date stated on the label
Packaging Materials: Tightly closing; material: stainless steel, aluminium, enamel, glass, food-approved plastics

SECTION VIII - EXPOSURE CONTROLS / PERSONAL PROTECTION
Monitoring
Threshold Value (Roche) Air:  IOEL: 10 mg/m³
Analytics: Sampling on filter or impinger and chemical determination (consider possible autooxidation)
Personal Protective Equipment
Respiratory Protection: Respiratory protection not necessary during normal operations
Hand Protection: Protective gloves (neoprene, nitrile or butyl rubber)
Eye Protection: Safety glasses
SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

Colour: Slightly yellowish

Odour: Almost odourless

Viscosity: 6589 cP (20 °C)

Density: ~ 0.96 g/cm³

Solubility: < 0.8 mg/l, water (20 °C, OECD No. 105)

well soluble, ethanol, well soluble, acetone, well soluble, chloroform, well soluble, diethyl ether, well soluble, vegetable oils

Partition Coefficient: Log P<sub>ow</sub> 12.2 (n-octanol/water)(calculated)

Melting Temperature: -27.5 °C

Boiling Temperature: 443 °C (1 bar)

Flash Point (liquid): 243 °C (DIN 51’728)

SECTION X - STABILITY AND REACTIVITY

Conditions to Avoid: Light, humidity

Materials to Avoid: Bases, strong acids, Oxidizing agents Iron, silver and metal salts, Alkalis *1

*1 referring to: d-α-Tocopheryl Acetate

SECTION XI - TOXICOLOGICAL INFORMATION

Acute Toxicity: LD<sub>50</sub> > 4’000 mg/kg (oral, rat)

LD<sub>50</sub> > 4’000 mg/kg (oral, mouse)

LD<sub>50</sub> 840 mg/kg (i.p., rat)

LD<sub>50</sub> > 3’000 mg/kg (dermal, rat)

Local Effects:

Eye: non-irritant (rabbit)

Skin: May be slightly irritating (several species)

Sensitization:

Very few cases of sensibilisation are known (human) *2

Subchronic Toxicity: NOAEL 2000 mg/kg/d (oral, rat; 13 weeks) *1

Mutagenicity: Not mutagenic (various test systems)

Carcinogenicity: Not carcinogenic

Reproduction Toxicity: Not teratogenic

Note: Natural radical scavenger and antioxidant *2

Therapeutic dosage: 100-300 mg/d *2

High doses may cause nausea, vomiting, diarrhoea, fatigue and weakness *2

Intensive skin contact may cause contact dermatitis *2

RDA (Recommended Dietary Allowance): 8-10 mg/day *2

*1 referring to: d-α-Tocopheryl Acetate

*2 referring to: dl-α-Tocopherol

SECTION XII - ECOLOGICAL INFORMATION

Ready Biodegradability: Not readily biodegradable, 17%, 28 days (Manometric Respirometry Test, OECD No. 301 F)

Inherent Biodegradability: Well inherently biodegradable 84%, 28 days (MITI Test II, OECD No. 302 C)

Ecotoxicity: Barely toxic for algae (nominal concentration = 100 mg/l),

test performed with water accommodated fractions (Selenastrum capricornutum)

EC<sub>50</sub> (72 h) > 100 mg/l (nominal concentration)

NOEC (72 h) 100 mg/l (nominal concentration) (OECD No. 201) *1

Barely toxic for planktonic crustaceans (nominal concentration = 100 mg/l),

test performed with water accommodated fractions (Daphnia magna)

NOEC (48 h) 100 mg/l (nominal concentration)

EC<sub>50</sub> (48 h) > 100 mg/l (nominal concentration) (OECD No. 202)

Barely toxic for fish (nominal concentration = 100 mg/l), test performed with water accommodated fractions (rainbow trout)

LD<sub>50</sub> (96 h) > 100 mg/l (nominal concentration)

NOEC (96 h) 100 mg/l (nominal concentration)

(OECD No. 203, semi-static) *1

Barely toxic for fish (nominal concentration = 100 mg/l),

no chronic toxic effects have been observed at or above solubility limit (rainbow trout)

NOEC (28 d) 100 mg/l (nominal concentration)

(OECD No. 215, Fish Juvenile Growth Test)

No adverse influence on substrate biodegradation (activated sludge)

concentration (28 d) 100 mg/l (nominal concentration)

(Manometric Respirometry Test, OECD No. 301 F) *1

Air Pollution: Observe local/national regulations

*1 referring to: d-α-Tocopheryl Acetate
SECTION XIII - DISPOSAL CONSIDERATIONS
Waste from Residues: Observe local/national regulations regarding waste disposal

SECTION XIV - TRANSPORT INFORMATION
Note: Not classified by transport regulations

SECTION XV - REGULATORY INFORMATION
Note: No classification and labelling according to EU directives
Water hazard class (Germany) 1: weakly hazardous for water
(according to annex 1 or 2 of directive VwVwS of 17.05.1999)

SECTION XVI - OTHER INFORMATION
Use: For the enrichment of foods,
Ingredient in pharmaceutical preparations
For various cosmetic products
Biological activity: 1 I.U. (International Unit) of vitamin E corresponds to the activity of 1.0 mg pure dl-α-tocopheryl acetate
Safety-lab number: BS-1762, BS-1765, BS-4527, BS-7412
Edition documentation: Changes from previous version in sections 1, 2, 4, 7, 8, 13, 16

PRODUCT FOR PROFESSIONAL USE ONLY.

IMPORTANT NOTICE: DSM N.V., headquartered in Heerlen, The Netherlands, has acquired the vitamins, carotenoids, enzymes, food and feed ingredients, cosmetics ingredients and fine chemicals business (VFC Business) of the Roche group of companies, headquartered in Basel, Switzerland. Within the United States, DSM Nutritional Products, Inc. has purchased certain assets and assumed certain liabilities of the VFC Business formally conducted by Roche Vitamins Inc. Please note that corporate names, trade names, trade and service marks and domain names containing the word “Roche” and the “Roche” logo will continue to appear on our business documentation during our transition. We appreciate your understanding and cooperation as we complete our rebranding program. Should you have any questions, or if DSM can be of further assistance to you, please do not hesitate to contact your Account Manager or our Account Management Center at: +41-62 866 2314.

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